REMARKS

By way of the present response, claims 1, 4-7, 10-13, 16-18 and 31-33 are amended. Support for the amendments can be found in Figures 2 and 3, and in paragraphs 0013-0026 of the specification. Applicants respectfully request reconsideration and withdrawal of the rejections of the claims in view of the above amendments and the remarks advanced below.

Claims 1, 6, 7, 12, 13, 18, 31 and 32 rejected under 35 U.S.C. § 103(a) as being unpatentable over Bennett et al. (U.S. 5,872,781) in view of Hluchyj (U.S. Patent Application Publication No. 2002/0041591). The Office asserts, with respect to independent claims 1, 7 and 13, that the Bennett teaches a method for identifying one of a plurality of communication channels for communication between one of a plurality of devices and a server, the method comprising: monitoring each of the plurality of communication channels (figure 2, item 34) between the plurality of devices and the server (column 6, lines 27-30), determining whether at least one the plurality of communication channels is being used for the transmission link pulses by the server, wherein the presence link pulses on one the communication channels indicates that that particular communication channel is not currently being used for data transmission by the sew and is available (column 6, lines 27-34), and establishing a connection between the device and the server using one of the available communication channels determined have the link pulses (column 6, lines 38-40). The Office acknowledges that while the Bennett patent teaches the connection of a server, Bennett is silent regarding the communication channel being connectable to a respective port among a plurality of ports the server. The Office further asserts that a server maintaining a plurality ports connectable to by devices in a network is an inherent characteristic a server, and that the Hluchyj publication demonstrates and describes such a system in Figure 4 and in paragraph 0027, which describes a network server includes a plurality of ports that are connectable to a network which in turn connects a plurality of other network enabled devices. The action goes on to state that it would have been obvious to one ordinary skill in the art to provide a network server that has a plurality of ports that a plurality networked devices can connect to through a network similar to one disclosed by Hluchyj in combination with Bennett because it would increase an ability to communicate with more devices.

It is respectfully submitted that the Bennett et al. and Hluchyj documents do not teach, suggest or otherwise render obvious the combinations of features now recited in independent claims 1, 7 and 13. More particularly, nether Bennett et al. nor Hluchyj disclose the claimed features of a plurality of communication channels that are "formable between the server and cascadedly arranged controllers, each controller associated with one of the devices, including n inputs, n > 1, ... monitoring, at each of the controllers, each of the plurality of communication channels between the controller and the computer," as recited in amended independent claims 1 and 7, and similar features set forth with respect to a system in amended independent claim 13.

The Bennett et al. apparatus is an adaptive repeater including a plurality of ports 34, as shown in Figures 1 and 2. According to Bennett et al., each device belongs to one of two domains, 14 and 16, which respectively correspond to 10-Mbps and 100-Mbps communications protocols (column 2, lines 31-35). An interface circuit 50 is connected to one of the devices through a respective repeater port 34, and operates to negotiate a protocol (i.e., a protocol corresponding to domain 14 or 16) for a connection that depends on a pulse link received from the device (see column 6, lines 25-36). Based on the detected protocol, the interface circuit establishes a link with the data device using either a bus 56 dedicated to a first communications protocol or a bus 60 (Bennett et al. does not show reference number "60" in the figures) dedicated to a second communications protocol (see, Figure 2). The bus 56 is connects to each of the other interface circuits 50 along links 54, and the second bus 60 connects to each of the other interface circuits 50 along link 58. While Bennett et al. describes that a "file server" can be connected as a devices to a port 34, Bennett et al. shows only one link between each data device and respective port 34 and interface circuit 50 (e.g., see Figure 1). Additionally, even if one were to consider, for the sake of argument, that the interface circuits 50 could be considered "controllers," the interfaces 50 are not cascadedly arranged as claimed. Thus, Bennett et al. does not describe nor suggest the claimed features of cascadedly arranged controllers, as set forth in each of amended independent claims 1, 7 and 13. Consequently, Bennett et al. also fails to describe the recited monitoring, at each of the controllers, each of the plurality of communication channels formed between the plurality of switching devices and the server," as recited in claims 1, 7 and 13.

The Hluchyj publication fails to remedy the above shortcomings of Bennett et al. Hluchyj describes a telephony gateway apparatus for connecting a circuit network with a

packet network (see, the abstract, paragraph 0019 and Figure 3). With respect to Hluchyj, the Office asserts that would have allegedly been obvious to connect such a multi-port server (e.g., ports of the packet network servers) to the repeater ports 34 in the Ethernet LAN of Bennett et al. However, even if one were to consider this proposed combination, there is nothing described in Hluchyj that would have suggested modifying the Bennett et al. repeater to meet claimed features that are missing in Bennett et al. Hence, no combination of the documents would have suggest that which is not claimed. Accordingly, the rejection based on Bennett et al. and Hluchyj should be withdrawn.

The office action also includes a rejection of claims 2-5, 8-11, 14, and 15 under 35 U.S.C. § 103(a) as being obvious over Bennett et al. and Hluchyj in view of Allmond et al. (U.S. Patent No. 5,754,552); and a rejection of claims 16, 33-36 under 35 U.S.C. § 103(a) as being obvious over Bennett et al. and Hluchyj in view of Patel et al. (U.S. 5,883,894). However, the Allmond et al. and Patel et al. patents, whether considered individually or in any combination with Bennett et al. and Hluchyj, fail to teach or suggest each and every feature recited in amended independent claims 1, 7 and 13.

Similar to Bennett et al., Allmond et al. describes a communication protocol detection system and method for network systems for enabling a network system to detect and interface on or more network devices operating within domains pertaining to different communication protocols. (Abstract). In column 13, starting at line 21, Allmond et al. describes a repeater (302) including a plurality of interface modules (400a to 400x), each including a separate transceiver to transmit data on a port link (402) at the correct repeater module (406 to 412), which can be operating on 10Base-T and 100Base-T protocols, for example. A processor (420) in the repeater monitors and controls the status of the modules according to link signal provided by the interface modules and enable either the 10Base-T transceiver or the 100Base-T transceiver depending on the protocol of the network device. However, the Allmond et al. patent does not teach, among other things, cascadedly arranged controllers, as presently claimed. Rather, like the interfaces of Bennett et al., the interface modules described in Allmond et al. are each connected to a plurality of busses and are not arranged in a cascaded arrangement. Furthermore, *only one* communication channel appears to be formed through each of the interface modules of Allmond et al. Thus, Allmond et al.

also does not appear to teach or suggest the claimed features relating to monitoring, <u>at each</u> <u>controller</u>, a plurality of communication channels formed by way of the controllers.

The Patel et al. patent also does not teach the claimed features missing in the Bennett et al., Hluchyj and Allmond et al. documents. With reference column 4, lines 20-31, Patel et al. describes a system including shared auto-negotiation logic for a multiple port intermediate network device. In the Patel et al. system, a shared auto-negotiation unit is coupled to a set of the ports rather than implementing an auto-negotiation state machine in each of the ports. (See col. 4, lines 2-4 and 32-40). However, there is no mention or suggestion anywhere in the Patel et al. patent of a plurality of cascadedly arranged controllers, as claimed. Instead, Patel et al. describes a system that utilizes a multiplexer (i.e., an [n]x1 PorMux 202) to connect between the ports and the auto-negotiation unit (see, column 4, lines 50-55). Accordingly, no combination of the Bennett et al., Hluchyj, Allmond et al. and Patel et al. documents would have taught or suggested what is recited in amended claims 1, 7 and 13.

Contrary to the teachings of the references described above, the claimed invention is directed to a system, method, and computer readable medium that enables identification of identifying at least one of a plurality of communication channels available for communication between one of a plurality of devices and ports of a server. Each communication channel is connectable to a respective port on the server, which allows for monitoring each of a particular port of the server associated with the channel, determining whether at least one of the plurality of communication channels and associated port is being used for the transmission of link pulses by the server, and establishing a connection between the device and the server using one of the available communication channels associated with the port determined to have the link pulses. To form and monitor the communication channels, the claimed invention utilizes controllers in a cascading arrangement to allow for communication channels to be selectively formed either through one or more of the controllers or to a device associated with one of the controllers. These features provide a number of advantages over the teachings of the applied references, including enabling equipment in a network to be conveniently rearranged, added or removed as desired, enabling easier servicing of network communication buses since the buses need not be bundled

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together, lowers costs, and provides increased reliability since network equipment may be provided with a simple, universal interface arrangement.

In view of the present amendments and remarks, the Office is respectfully requested to reconsider and withdraw the rejection of independent claims 1, 7 and 13. Since claims 2-6, 8-12, 14-18 and 31-36 depend from, and therefore contain the limitations of claims 1, 7 and 13, they are also distinguishable over the cited reference and patentable in the same manner.

Based on the foregoing, Applicants submit that this case is in condition for allowance and such allowance is earnestly solicited.

Respectfully submitted,

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